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# No place like home

Expedition 6 Commander Ken Bowersox embraces his kids – Matt, Tim and Luke – whom he had not seen since before his Nov. 23 launch to the International Space Station. Bowersox and his crewmates, ISS Science Officer Don Pettit and Flight Engineer Nikolai Budarin, were reunited with their families at Ellington Field on May 21.

*For more about Expedition 6, see page 4.*

# Director's Message



## We of Good Fortune

Since February 1 it's been a rocky road for NASA and JSC. The tragedy of lost friends and heroes is bad enough in itself. Add the ensuing investigation, accompanying criticism and second-guessing in the press, and one might want to feel sorry for oneself. Even worse, one might be persuaded to quit and do something else.

Let's not do that. I believe this month is a great time for us to hold our heads up, think about the big picture and realize how very fortunate we are to be who we are and what we are a part of. Let's think about the Fourth of July and what it stands for.

There was no such thing as a citizen 227 years ago. There hadn't been any citizens on this Earth for almost 2,000 years. Even if you were considered a free man, you were still subject to the whims of a king, monarch or emperor. That all changed during July of 1776 in Philadelphia when a group of highly educated, prosperous men representing the 13 colonies decided to put their lives and fortunes at risk in order that people in this land could enjoy the right to life, liberty and the pursuit of happiness.

These were not perfect men. They had the same problems with pride, prejudice, professional jealousies, ambition and political rivalry that abound our society today. The union that they later formed was not perfect either. The injustices of slavery and inequality for large groups of citizens were shelved as a political necessity. Nevertheless, the actions of these incredible men and the women who supported them brought about a turning point in the path of humankind that has shaped world history to this day.

I am convinced that had it not been for the likes of Washington, Adams, Franklin, Jefferson, Madison and their many cohorts who lived by the credo "Give me liberty or give me death!" our world would be a much different place today. We certainly would not be living the healthy, prosperous and technologically advanced lives that we now enjoy. What a wonderful blessing it is to be a citizen of the United States of America!

So let us take a moment to give thanks for these brave souls who put everything on the line to gain the freedom that we enjoy today. Let's also give thanks for all those others who have paid the ultimate sacrifice for the past 227 years to ensure that our democracy would remain secure. Finally, let us also dedicate ourselves to giving our very best to furthering the exploration of space. Let us show the same courage demonstrated by our forefathers and press on with our cause.

We are so fortunate! God Bless America!

Beak sends...

### In next month's issue...

The August *Roundup* will include a tribute to Ron Dittmore, the departing Space Shuttle Program Manager, as well as a welcome to his successor, Bill Parsons.

APPEARING THIS MONTH IN OUR

## Guest Space

William Gerstenmaier

International Space Station Program Manager



### Strong international partnership shares common goal of human spaceflight

Halfway through 2003, the 100th year of humans in flight, we are grateful to report that the legacy continues after navigating some very rough seas. We had a successful crew rotation on the International Space Station, and the seventh Expedition is now onboard – in good health and working productively. The teams have all done a remarkable job staying focused on the people we have in orbit, and they are equally vigilant working the multiple tasks we have in front of us.

This year has been a very tough year for spaceflight, our NASA family, the nation and the world. As we look to the future we rely on the steadfastness of our commitment to be the best we can be, to be adaptable and flexible, and to remain true to the pledges we have made to our countries and people. The ISS Program has been enormously enriched by the contributions each international partner is making in human spaceflight. Despite different cultures, languages, engineering approaches and politics, the ISS partners are finding solid ground – on Earth and in orbit – upon which to build a path to the stars.

Looking back to January, I remember telling the troops to be ready for a "Perfect Storm" – a confluence of major activity from different directions converging into a surge of unimaginable ferocity. We were expecting a convergence of management challenges as we instituted new financial tools and reporting processes. We knew our major contracts were coming up for review. We were preparing for 11 spaceflights and unprecedented space engineering – reconfiguring all major systems on orbit while adding more than 80,000 pounds of hardware. And we expected that operating the Station 24/7 would only continue to challenge us as we responded to issues large and small on a daily basis.

We knew 2003 was going to be tough. We had no idea. We were never prepared for loss of the STS-107 crew and *Columbia*. We will never return to normal, but we are moving on.

Because our teams stayed focused on the people we had in orbit, we managed to bring Ken, Don and Nick home safely and send Yuri and Ed as the seventh Expedition to the ISS. We did this because we have a strong international partnership with common goals. Our Russian partners bear the brunt of the post-*Columbia* burden, having performed two Progress launches and a crew rotation on the Soyuz with their signature professionalism and commitment to human spaceflight. They are taking extraordinary measures to ensure the continuity of humans in space.

We are learning the true meaning of partnership, and the give-and-take it requires to stay fixed on our star. International teamwork and dedication have allowed us to make amazing progress: we have created manifest plans, conquered logistics shortfalls, planned crew rotations, moved international hardware to Cape Kennedy, and stayed engaged in science and productive work on the Station. We did all this while juggling several detailed assembly options; while moving through an exhaustive budget review cycle and extensive contract consolidation; and while surviving tough international management meetings, where partners had to weigh their national priorities against the greater good. The words "awesome," "incredible" and "inspiring" come to my mind when I think of all the individuals across oceans who have performed all these tasks to bring us where we are today. This is an awesome team.

Where are we today? The Station flies 45 percent assembled, 72 percent of the way to U.S. core complete, with 89 percent of all U.S. systems software deployed and operating. At Kennedy Space Center, the Multi-purpose Logistics Module, Raffaello, is waiting to be reloaded. The Truss and Solar Array elements stand ready to fly, after we confirm that the extended storage time has not affected their ability to be deployed. The exciting arrivals of the European-built Node 2 and the Japanese Experiment Module build the clear picture that the partnership is real, expansive and moving forward.

This is a good time for all of us to think about how we can communicate even better, not just among ourselves but with the greater public. The ISS doesn't belong to us; it belongs to the whole world. We have an obligation to prove and explain how spaceflight can lead us to better relationships, better technology and better ways of using the knowledge we gain to make a better world.

I also believe we need to focus on the next generation and truly entice them to become part of this plan so they can improve upon what we do today. I have great faith this will happen and am very thankful to be a part of this incredible experience.

*Despite different cultures, languages, engineering approaches and politics, the ISS partners are finding solid ground – on Earth and in orbit – upon which to build a path to the stars.*



## A LEGACY OF CARING

# Joe Fries retires as WSTF Manager

by Cheerie R. Patneau  
NASA White Sands Test Facility



Joe Fries and Bob Baker at the White Sands Space Harbor 25th Anniversary Celebration.

wstf0801-1958 Photo by Randy Page

Joe Fries at the Mars Settlement Design Competition.

wstf1002-2785 Photo by Lou Rosales

In 1999, JSC Center Director George Abbey presents the 35-year service award to Joe Fries.

wstf0499-0769 Photo by Randy Page

Mark Leifeste and Joe Fries present NASA fire truck to New Mexico State University's DABCC Fire Science Program.

wstf0802-1977 Photo by Randy Page

**I**t is no surprise that Joseph Fries, NASA Manager of Johnson Space Center's White Sands Test Facility, has been the recipient of numerous performance, achievement and management awards during his career. It is also no secret that during his administration, the test facility received the Star for Safety from the Occupational Safety and Health Administration, and that the site continues to collect awards for Star of Excellence and Star Among Stars from OSHA.

But readers might be surprised to learn that he credits his wife, Sue, as the most influential person in his life, and that he cares about employees' safety at work just as he cares about his family's safety at home.

Fries, Manager of WSTF since 1998, is retiring from the Agency on July 3.

"I wouldn't be where I am today without my wife, my peers, subordinates and supervisors who have helped me a lot," said Fries. "They have made my life easier, and I've been fortunate to get a lot of recognition for what they've done."

Fries has made workplace safety a top priority during his career. The OSHA Star flag that now flies above WSTF is there largely because of his commitment to workplace safety, and to creating what he calls a "true safety culture" at the test facility. "It's a no-brainer," he said, "to think highly of the people you need to work with and treat them as family, especially when it comes to their safety."

He credits the employees with earning OSHA's Star rating, and is proud of the fact that WSTF was the first site where both civil servant and contractor teams earned Star flags from the same safety audit.

As Manager of WSTF, Fries worked long-distance to fulfill JSC goals – the facility lies near Las Cruces, N.M., nearly 800 miles from Houston. "I have enjoyed the freedom that JSC management has given me to run this facility," he said. "They basically left the decision-making up to me, to do the job that needed to be done without interference. The confidence they afforded me certainly made this an awesome assignment."

"I have worked with a super group of people who have been a pleasure to manage," he said of his employees. "They are professional and entirely focused on performing the mission we need to accomplish."

But Fries is also quick to credit his wife for her support throughout his career. "Sue created stability in my life," he said. "She brought to our marriage an understanding of the demands my career would make on our time. There were big demands, too," he said, citing the two moves between New Mexico and Houston that the couple made in 1997.

In addition to her encouragement, Sue also gave Fries "a better understanding of the education world," he said. "She is a teacher, and I have greater appreciation and have given my support to NASA education outreach because of her focus."

"I'm going to be doing a lot more fishing this summer," Fries said when asked about his retirement plans. He said he also looks forward to hunting and "spending much more time with my grandkids."

"Well, I will be doing some work," he amended. "I've been reappointed to the New Mexico Space Commission, and with the energy I have left, I will be spending time with a lot of clubs and volunteer organizations that I belong to and will continue to support."

Fries said that he expects WSTF to continue to thrive after he leaves. "We'll be growing," he said. "I hope we grow at a rate that is slow enough so we don't overextend our product quality, responsiveness and flexibility. I don't want us to grow too fast to sacrifice what we are."

Fries will be replaced by Steve Nunez, who previously served as Deputy Manager, Management Integration Office in the International Space Station Program. Nunez joined JSC in 2001 as Special Assistant to the Manager, ISS Program, and began his NASA career at Stennis Space Center in 1989.

"I'm leaving WSTF in the good hands of Steve Nunez, the NASA workforce and our contractor team," said Fries. "I believe that the site will continue to do well in the future."

## Career at a Glance

- 1963** began career with NASA at the then-named Manned Spacecraft Center in Houston as a Cooperative Education Student
- 1966** graduated from the University of Houston with a Bachelor's of Science in Mathematics
- 1966** continued career with NASA in the Propulsion and Power Division, contributing to the development of the Apollo Spacecraft Propulsion systems. After the successful development of the Apollo systems, Fries was instrumental in the definition and development of the Space Shuttle orbiter propulsion systems
- 1978** transferred to the White Sands Test Facility as Operations Director responsible for the development and qualification testing of the Space Shuttle orbital maneuvering and reaction control propulsion systems
- 1990** appointed as Deputy Manager, WSTF
- 1997** selected as Deputy Director, Center Operations, JSC
- 1998** selected as Manager, WSTF

### Awards

JSC Certificate of Commendation  
NASA Exceptional Service Medal  
NASA Outstanding Leadership Medal  
Meritorious Executive Presidential Rank Award

### Service

New Mexico Governor's Technical Excellence Committee  
Southwest Regional Space Task Force  
State of New Mexico Space Commission



Photo taken at Dale Long's retirement party.

wstf0601-1245 Photo by Lou Rosales



# Expedition 6 crew receives a hero's welcome

By Jennifer Ramby

From a change in crew to a new ride home, Expedition 6 members – International Space Station Commander Kenneth Bowersox, ISS Science Officer Donald Pettit and Flight Engineer Nikolai Budarin – were “all about teamwork and flexibility,” said ISS Program Manager Bill Gerstenmaier.

The following are mission highlights:

- Backup flight engineer Pettit replaced Donald Thomas just months before launch due to a medical concern identified for Thomas. Bowersox later said that Pettit was “born to be a Space Station Science Officer.”
- Expedition 6 launched Nov. 23 aboard Space Shuttle *Endeavour* during STS-113, taking with it the first port truss segment (P1 Truss), which will eventually combine with other segments to provide additional Station cooling and support for a massive power system that will fuel a complex of orbiting laboratories.
- On Dec. 4, the crew took part in the ceremonial lighting of more than 30,000 lights on the Christmas tree at Rockefeller Center in New York City.
- Bowersox and Pettit performed their first – and the Station's fiftieth – spacewalk on Jan. 15 to release the remaining launch locks on the P1 Truss radiator assembly, which allowed the radiator assembly to be deployed.
- On Feb. 1, the Expedition 6 crew, like the rest of NASA, lost seven friends. “It's important for us to acknowledge that the people on STS-107 were our friends and we had a connection with them and that we feel their loss, and each of us had a chance to shed some tears. But now it's time to move forward and we're doing that slowly,” Bowersox said on Feb. 11 during the crew's first press conference following the loss of *Columbia*.
- Showing their dedication, flexibility and courage, the crew volunteered to do whatever it took to keep the Station occupied and functioning, including staying on the ISS for a year or more.
- In another act of resilience, Bowersox and Pettit performed a second, unplanned spacewalk on April 8 to get ahead on future assembly missions. Bowersox reconfigured electrical connectors to ensure against inadvertent release of truss segments, and Pettit replaced a power relay box in the Mobile Transporter railcar system. They also installed two devices to prevent ammonia leakage from the Station's cooling system, secured a thermal cover on the S1 truss and deployed a light stanchion to assist future spacewalkers.
- Throughout the mission, Pettit remained committed to science. In addition to the 21 planned science experiments, Pettit conducted personal experiments on his own time that became known as Saturday Morning Science. He also wrote several Space Chronicles documenting his crew's experience aboard the ISS.
- After 161 days in orbit, the crew landed May 4 in Kazakhstan aboard the Russian Soyuz TMA-1 capsule, making Bowersox and Pettit the first Astronauts to land in a Soyuz spacecraft.
- The Expedition 6 crew returned to Houston May 21.



NASA Administrator Sean O'Keefe and Russian space officials welcome the crew of Expedition 6 to Star City, Russia after their Soyuz capsule landed in Kazakhstan.

Jsc2003e33759 Photo by Bill Ingalls



JSC Director Jefferson D. Howell, Jr. and the Expedition 6 crewmembers pose for a photo following the crew arrival at Ellington Field.

Jsc2003e37463 Photo by David DeHoyos



Kyrstyn Wright presents Commander Ken Bowersox with flowers at the Crew Return ceremony. Wright is the granddaughter of United Space Alliance's Nancy Wilkerson, Technical Integrator in the ISS Program's Requirement Increment Integration Office.

Jsc2003e40054 Photo by David DeHoyos

*It is because of you that the ISS, the brightest star on the horizon, continues to shine.*

Russian Aviation and Space Agency Liaison Sergei Ripkin, during the crew's welcome home ceremony May 27



LEFT TO RIGHT FROM TOP

The Expedition 6 crew's official portrait: Astronauts Don Pettit, Expedition Six ISS Science Officer; Ken Bowersox, Mission Commander; and Cosmonaut Nikolai Budarin, Flight Engineer, attired in training versions of the Shuttle launch and entry suit. Budarin represents Rosaviakosmos.

ISS006-s-002

Expedition 6 ISS Science Office Don Pettit, pictured onboard the ISS.

ISS006e08663

The Expedition 6 crewmembers give a thumbs-up onboard an aircraft flight from Kazakhstan to Moscow after their Soyuz capsule landing.

Jsc2003e33758 Photo by Bill Ingalls

Expedition 6 Commander, shown working onboard the ISS.

Jsc2003e33758

Expedition 6 Flight Engineer Nikolai Budarin, shown training at JSC.

Jsc2002-00709

HOMeward  
BOUND

by Don Pettit

The following was NASA ISS Science Officer Don Pettit's final Space Chronicle during his mission. To read his other entries, which cover topics ranging from Saturday Morning Science to what space smells like, visit <http://spaceflight.nasa.gov/station/crew/exp6/spacechronicles.html>.

The feeling of being home is directly proportional to how far you have traveled. When you go out to dinner, you feel home when you pull into the driveway. When you go for a drive to a state park some distance out of town, you feel home when you enter the outskirts of your city. When you drive across the United States, perhaps on one of those memorable family vacations, you get this warm feeling of being home when you cross over your state line. When you go on international travels, particularly when returning from places with radically different cultures, you feel home the first place your airplane lands on U.S. soil. You may still be 2,000 miles from home, but you have this wonderful sensation in your heart that speaks out to you.

After having been on Space Station for nearly six months, we will be returning on the Soyuz spacecraft and be landing on the desert plains of Kazakhstan. When our capsule goes thump on those desert flats, we will be literally on the opposite side of the world, nearly 12,000 miles from home. Yet once normal breathing resumes, we will have this warm sensation inside that we are home. I can picture sometime in the future, a crew will be returning from Mars and after inserting themselves into low Earth orbit, perhaps from an aero-braking maneuver, they will look down from their orbital vantage point at this blue jewel circling below and say, “We are home.”



# Skylab: Stepping stone to today's ISS

By Lisa Tidwell



An overhead view of the Skylab space station cluster in Earth orbit as photographed from the Skylab 4 Command and Service Module (CSM) during the final fly-around by the CSM before returning home.  
sl4-143-4706

Astronaut Jack R. Lousma, Skylab 3 pilot, participates in the August 6, 1973, extravehicular activity (EVA) during which he and Astronaut Owen K. Garriott, science pilot, deployed the twin pole solar shield to help shade the Orbital Workshop (OWS).  
sl3-122-2611

Floodlights illuminate this nighttime view of the Skylab 3/Saturn 1B space vehicle at Pad B, Launch Complex 39, Kennedy Space Center, Fla., during prelaunch preparations.  
s73-32568



The Skylab space station was launched May 14, 1973 by a Saturn V launch vehicle, the same kind that sent Astronauts to the Moon during the Apollo Space Program. The Skylab Program had two major objectives: to prove that humans could live and work in space for extended periods, and to expand our knowledge of solar astronomy well beyond Earth-based observations.

Successful in all respects despite early mechanical difficulties, three three-man crews occupied the Skylab workshop for a total of 171 days and 13 hours. It was the site of nearly 300 scientific and technical experiments: medical experiments on humans’ adaptability to microgravity, solar observations and detailed Earth resources experiments.

Almost immediately after the unmanned Skylab 1 launch, technical problems developed due to vibrations during liftoff. A critical meteoroid shield ripped off, taking one of the craft’s two solar panels with it, and a piece of the shield wrapped around the other solar panel.

Skylab was maneuvered so its Apollo Telescope Mount solar panels faced the Sun to provide as much electricity as possible for the station. Doing so without the now-lost meteoroid shield, however, caused workshop temperatures to increase to 126 degrees Fahrenheit.



## Missions overview

- Skylab 1

May 14, 1973, unmanned
- Skylab 2

May 25, 1973 – June 22, 1973  
Charles Conrad, Jr., Paul Weitz, Joseph Kerwin
- Skylab 3

July 28, 1973 – September 25, 1973  
Alan Bean, Jack Lousma, Owen Garriott
- Skylab 4

November 16, 1973 – February 8, 1974  
Gerald Carr, William Pogue, Edward Gibson

# This year marks the 30th anniversary of Skylab

The first Skylab crew – Charles Conrad, Jr., Paul Weitz and Joseph Kerwin – was launched on May 25, 1973 to an unwelcoming station. The crew made substantial repairs, including deployment of a parasol sunshade, which cooled the inside temperatures to a more comfortable environment of 75 degrees Fahrenheit, and the deployment of the remaining solar array, which brought the power levels up enough to perform closely to the planned mission schedule.

In spite of the problems encountered, the first manned mission accomplished most of its objectives. During its 28-day stay, the crew conducted solar astronomy and Earth resources experiments, medical studies, five student experiments and three spacewalks totaling six hours and 20 minutes.

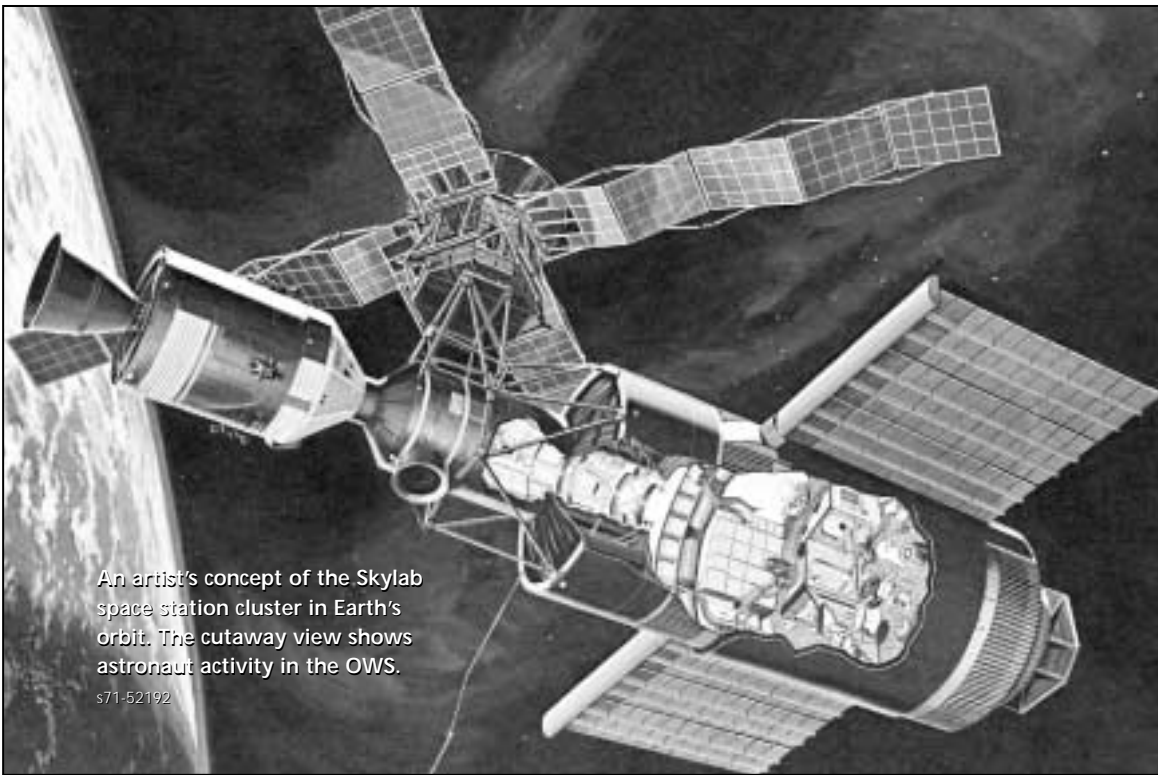
After the departure of the Skylab 2 crew on June 22, Skylab sat empty for six days awaiting her new crew. Alan Bean, Jack Lousma and Owen Garriott arrived at Skylab on July 28, 1973 for a 59-day stay aboard the space station. The new crew continued maintenance of the station, performed extensive scientific and medical experiments totaling 1,081 hours of solar and Earth experiments, and spent nearly 14 hours performing three spacewalks.

Skylab 4, launched November 16, 1973, was the last mission to the station. Gerald Carr, William Pogue and Edward Gibson called Skylab home for 84 days before closing the hatch for the last time. The last of the Skylab missions included an unplanned observation of the Comet Kohoutek among numerous experiments. The crew completed four spacewalks totaling more than 22 hours.

Following the final manned phase of the Skylab mission, ground controllers performed some engineering tests of certain Skylab systems – tests that ground personnel were reluctant to do while astronauts were aboard. Results from these tests helped to determine causes of failures during the mission and to obtain data on long-term degradation of space systems.

Upon completion of the engineering tests, Skylab was positioned into a stable attitude and systems were shut down. It was expected that Skylab would remain in orbit eight to ten years. However, in the fall of 1977, it was determined that Skylab was no longer in a stable attitude as a result of greater than predicted solar activity.

The empty Skylab spacecraft returned to Earth July 11, 1979 scattering debris over the Indian Ocean and the sparsely settled region of Western Australia.



## Components of Skylab

- Orbital Workshop (OWS) – primary crew quarters and work areas, volume equivalent to a five-bedroom house
- Airlock Module (AM) – extravehicular activity port and station's control and monitoring instrumentation
- Apollo Telescope Mount (ATM) – solar observatory
- Multiple Docking Adapter (MDA) – docking ports and controls for the ATM and Earth resource instrumentation



### FROM LEFT TO RIGHT

Astronaut Paul J. Weitz, pilot for the first manned Skylab mission, prepares to check out the bicycle ergometer in the work and experiments area of the crew quarters of the OWS trainer during Skylab training at the Johnson Space Center.

s73-20205

Scientist-Astronaut Joseph P. Kerwin, Skylab 2 science pilot, serves as test subject for the Lower Body Negative Pressure Experiment. Astronaut Paul J. Weitz, Skylab 2 pilot, assists Kerwin with the blood pressure cuff.

sl2-2-180

Scientist-Astronaut Edward G. Gibson, science pilot for the Skylab 4 mission, demonstrates the effects of zero-gravity as he sails through airlock module hatch.

sl4-150-5074

Scientist-Astronaut Edward G. Gibson, Skylab 4 science pilot, stands at the ATM console in the MDA of the Skylab space station cluster in Earth orbit

s74-17306

View of Astronaut Alan L. Bean, Skylab 3 commander, in his sleep compartment, reading a book.

sl3-112-1527





# 2003 Rotary Stellar Award Winners

## INDIVIDUAL WINNERS

**Angela Prince**  
Johnson Space Center

**James Tsai**  
Boeing Rocketdyne

**Bryan Corley**  
United Space Alliance

**Joseph Martinez**  
Boeing Rocketdyne

**Capt. Robert Bridges**  
United States Air Force

**Donald Carter**  
Marshall Space Flight Center

**Ralph Roe**  
Johnson Space Center

**Maj. Rudolph Butler**  
United States Air Force  
Space Command

**David Wineland**  
Boeing Rocketdyne

**Stephen King**  
Lockheed Martin

**Laura Brozowski**  
Boeing Rocketdyne

**Stephen Beckel**  
Pratt & Whitney

**Charles Chase**  
Pratt & Whitney

**John Talone**  
Kennedy Space Center

**Daniel Hausman**  
Boeing Rocketdyne

**Col. Stanley Mushaw**  
United States Air Force

## TEAM WINNERS

**ISS Cardiocog Battery  
Hazard Identification Team**  
Johnson Space Center

**Miniature Autonomous  
EVA Robotics Camera Team**  
Johnson Space Center

**Evolved Expendable  
Launch Vehicle Team**  
United States Air Force

**Space Control Squad**  
United States Air Force

**ISS Space Station  
Electric Power Team**  
Boeing Rocketdyne

**Orbiter Flow Liner  
Investigation Team**  
Boeing

**Roy Estess**, former director of Stennis Space Center, was the recipient of the prestigious National Space Trophy for 2003. In his nomination of Estess, NASA Administrator Sean O'Keefe said, "Roy is recognized as a perceptive, objective and outstanding executive and leader, and his profound contributions are distinguished by both their breadth and impact."



Roy Estess (left) accepts the 2003 National Space Trophy from Center Director, Sean O'Keefe.

jsc2003e40316 All photos this page by Bill Stafford

Estess has more than four decades of service to the federal government and more than 35 years with NASA. A native of Tyler Town, Miss., Estess graduated from Mississippi State University with a degree in aerospace engineering. He joined NASA in 1966 as a test engineer on the Saturn V second-stage test program. In 1980, he was named Stennis' Deputy Director, becoming its Director in 1989. Estess then fulfilled a temporary assignment to NASA Headquarters from 1992-93, serving as a special assistant to two NASA Administrators. From February 2001 to April 2002, he was temporarily assigned as acting director of Johnson Space Center. During his tenure at JSC there were seven flawless Shuttle missions, the International Space Station became operational and the Hubble Space Telescope was serviced.

"Roy joined NASA at the height of the Apollo program and has played an instrumental role in the successful development of the Agency," said O'Keefe. "He literally grew up with NASA and has been an exemplary public servant and visionary manager throughout his career."

Estess has been the recipient of numerous awards and honors, which include the 2002 NASA Outstanding Leadership Medal, the 2000 Distinguished Service Medal, the 1997 Distinguished Presidential Rank Award, NASA's Distinguished Exceptional Service award, the 1993 Outstanding Leadership Medal as well as Citizen of the Year in his home town.

Astronauts Sandra Magnus and James Reilly II presented the 2003 Rotary Stellar Awards.



**Angela R. Prince (left)**  
Lead of MOD's Robotics Systems Group  
NASA Johnson Space Center

Exceptional leadership of the Mission Operations Directorate's Robotics Systems Group and successful leadership through the most challenging period of Robotic Operations in human spaceflight history.



**Ralph R. Roe, Jr. (left)**  
Manager, Space Shuttle Vehicle Engineering Office  
NASA Johnson Space Center

Motivational leadership and effective management for the Space Shuttle Program in the design, modification, certification and testing of the orbiter vehicle.



**Miniature Autonomous EVA Robotic  
Camera (AERCam) Team**  
Steven E. Fredrickson (left)  
Computer Engineer  
NASA Johnson Space Center

Outstanding innovation and technical excellence in developing and demonstrating Mini AERCam, a nanosatellite free-flying inspection robot intended for remote viewing inspection around human spacecraft such as the International Space Station.



**ISS Cardiocog Battery Hazard  
Identification Team**  
Christine Stewart (left)  
Payload Safety Engineer  
NASA Johnson Space Center

Identification, research and testing of serious safety issues with the Cardiocog battery, leading to a decision by the ISS program manager that the batteries should not be used on the International Space Station, contributing to the safety of ISS crew.

SPACE CENTER

## Roundup

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